

## REMARKS

Claims 1-32 are under consideration. Claims 33-58 have been withdrawn from consideration by the Examiner, presumably due to finality of the Restriction Requirement presented in the previous Office Action. The withdrawal of the rejections in the previous Office Action involving Aida et al. is noted with appreciation.

The indication of allowability for Claim 14 is noted with sincere appreciation. The novelty of Claims 2-13 and 15-32 is also noted with sincere appreciation.

The Examiner is thanked for her time and her guidance regarding the present Office Action during the telephonic conference held on November 4, 2005, with the undersigned.

### Rejection under 35 U.S.C. 112, second paragraph

Claims 6, 15, and 27 stand rejected under section 112, second paragraph, as allegedly indefinite. The Examiner supports this rejection by asserting that the word "partially" in the phrase "partially halogenated aluminoxane" is a relative term. This rejection is respectfully traversed. The Office Action states that the Claims rejected hereunder do not further limit the claims from which they depend. This suggests that what is not understood is the limitation added by the term "partially halogenated aluminoxane" as used in these claims. As described in the Specification (Page 3, paragraphs 0013 and 0014), the haloaluminoxane compositions of the invention can be ionic haloaluminoxane complexes or partially halogenated aluminoxanes, which partially halogenated aluminoxanes are neutral aluminoxanes. When read in light of the Specification, the term "partially halogenated aluminoxane" in Claims 6, 15, and 27 adds the limitation that the haloaluminoxane composition is a neutral aluminoxane where halogen atoms are coordinated to some of the aluminum atoms of the aluminoxane. Thus, it is submitted that this rejection fails to establish a *prima facie* case of indefiniteness and should be reconsidered and withdrawn.

### Rejection under 35 U.S.C. 102(b)

Claim 1 stands rejected under § 102(b) as anticipated by Kioka et al. (U.S. 6,063,726). This rejection is respectfully traversed. Claim 1 has been amended to recite that the halogen is fluorine, and that the amount of halogen atoms present is in the range of about 0.5 mole % to about 10 mole %. Support for these amendments is found at least at Page 2, paragraph 0009 and Page 10, paragraph 0037 of the Specification.

As amended, Claim 1 is novel and deemed patentable over Kioka et al. The range disclosed in Kioka et al. for the amount of halogen in the aluminoxane is quite broad, and can be from 0-80 parts hydrocarbylaluminum and 0-80 parts haloaluminum, provided that both are not simultaneously zero (column 8, lines 40-53), which is equivalent to zero mole % (when  $b = 0$ ) to 97 mole % (when  $a = 0$ ) halogen relative to aluminum (for formula II). Kioka et al. does not use  $a = 30$  and  $b = 3$ , the values chosen on Page 2 of the Office Action. There is no disclosure in Kioka et al. that any particular relative amount of halogen to aluminum is more or less beneficial. Also, all of the working examples in Kioka et al. have chlorine as the halogen in the aluminum compound used in forming the aluminoxanes therein. Furthermore, unexpected results have been achieved in the present invention. The compositions of the present invention have properties which the aluminoxanes of Kioka et al. do not. The compositions of present Claim 1 form gels much more slowly than non-fluorinated aluminoxanes (Example 13, Table 1), an unexpected and useful property, especially for storage and transportation. Kioka et al. only teaches such aluminoxanes as part of a catalytic composition in which component A is a Group IVB metal on a support and component B is the aluminoxane (column 7, lines 39-42 and column 8, lines 37-65), not the aluminoxanes alone. In addition, the compositions of the present invention show greater polymerization activity as compared to non-fluorinated aluminoxanes (Examples 25, 26, and 38; Tables 2, 3, and 5). The activity in Table 2 is 1.36 times greater with a fluoroaluminoxane than with methylaluminoxane (found by dividing the activity with F-MAO by the activity with MAO;  $1.5 \div 1.1 = 1.36$ ); the increases seen in the systems of Table 3 is even greater. In comparison, the polymerization systems of Kioka et al. show at best 1.1 times greater activity with halogenated aluminoxanes than with nonhalogenated aluminoxanes (see Table 6 in column 30 and Example 1 in column 16, lines 45-51; activity in Example 1:  $85.9 \text{ g of polymer} \div 0.015 \text{ mol Zr} = 5700$ ; increased activity:  $6200 \div 5700 = 1.1$ ). Thus, Kioka et al. fails to teach the elements of present Claim 1, especially in light of the unexpected results obtained with the present invention. On the basis of the foregoing, it is respectfully requested that the rejection of Claim 1 over Kioka et al. under § 102(b) be reconsidered and withdrawn.

Rejection under 35 U.S.C. 103(a)

Claims 1-13 and 15-32 stand rejected under section 103(a) as allegedly obvious over Kioka et al. This rejection is respectfully traversed. Claim 2 as amended expressly incorporates the limitations of original Claim 1, from which original Claim 2 depended. The amendment to Claim 2 does not in any way change the scope of Claim 2. Claim 3 has been amended to recite that the amount of halogen atoms present is in the range of about 2 mole % to about 8 mole %. Support for the amendment to Claim 3 can be found at Page 10,

paragraph 0037 of the Specification; claiming a range within a supported range is permissible (M.P.E.P. § 2163.05 III). The dependency of Claim 4 has been changed, and Claim 4 now depends from Claim 2 rather than from Claim 1.

The present Office Action states on page 3 that Kioka et al. teaches a halogenated aluminoxane catalyst component (B) represented by formulas (II) and (III) wherein  $b/[(a+b)+2]$  or  $b/(a+b)$  can be in the range about 0.005 to 0.15. For the record, this is not entirely accurate. Kioka teaches a halogenated aluminoxane catalyst component (B) represented by the formulae (II) and (III) in which  $b/[(a+b)+2]$  or  $b/(a+b)$  gives the amount of halogen relative to aluminum, where  $a = 0$  to 80 and  $b = 0$  to 80, but both  $a$  and  $b$  cannot simultaneously be zero (column 8, lines 37-67). Nowhere does Kioka et al. select or suggest an amount of halogen relative to aluminum in the range about 0.005 to about 0.15, as in the present claims.

There is no *prima facie* case of obviousness in the present Office Action because there is no motivation or suggestion to modify the teachings of the cited reference. No such motivation is pointed out in the Office Action, nor does Kioka et al. provide such motivation or suggestion. In fact, Kioka et al. teaches away from the present invention. Kioka et al. discloses halogenated aluminoxanes without hydrocarbyl groups (column 9, lines 49-50, where  $a = 0$ ), which halogenated aluminoxanes have far more halogen (97 mole %) than is claimed in the present invention. Moreover, Kioka et al. describes aluminoxanes *without halogen* (column 9, lines 14-33, where  $b = 0$ ), which type of aluminoxane is not part of the present invention. Thus, halogenated aluminoxanes having a halogen content within a specific range are not suggested by Kioka et al., nor would such compositions have been obvious to those of ordinary skill in the art at the time the invention was made.

As described in the Response to the previous Office Action, that something is "within the generic disclosure of the reference and is expected to work," (present Office Action, page 3) is not the standard for determining obviousness under 35 U.S.C. §103(a). The standard is whether the claimed invention would have been obvious to one of ordinary skill in the art at the time the invention was made. Thus, the statement that the present invention seems to be within the generic disclosure of the prior art suggests that this §103 rejection is actually a genus-species rejection. A motivation or suggestion to select the species is still required, and as noted above, motivation or suggestion to modify is absent.

Unexpected results can overcome obviousness rejections, including genus-species obviousness rejections. As described above regarding the § 102 rejection, the unexpected results in the present invention include the increased stability of the haloaluminoxanes, and the increase in polymerization activity observed when a haloaluminoxane of the present invention is employed. Kioka et al. does not suggest that these results are possible, and again there is nothing in Kioka et al. that suggests that any particular amount of halogen relative to aluminum in the halogenated aluminoxane is more beneficial or desirable than any other amount of halogen relative to aluminum.

Further, regarding Claim 1, the compositions of this claim involve haloaluminoxanes where the halogen is fluorine. Kioka et al. clearly prefers chlorine as the halogen, and as already stated in this Response, Kioka et al. does not teach or suggest any particular amount of halogen relative to aluminum as being more or less desirable. In regard to Claims 2-13 and 15-32, the compositions of these claims are made from a halogenating agent and an aluminoxane. In contrast, the halogenated aluminoxanes of Kioka et al. are made by hydrolyzing a trialkylaluminum compound and/or a dialkyl aluminum monohalide (column 10, lines 1-11). The halogenation of a previously-formed aluminoxane is not contemplated by Kioka et al.

In summary, there is nothing in Kioka et al. which teaches or suggests the present invention, and the § 103 rejection of Claims 1-13 and 15-32 over Kioka et al. should be reconsidered and withdrawn.

In light of the foregoing remarks, the case is believed to be in condition for allowance. Prompt notification to this effect would be sincerely appreciated.

If any matters remain that require further consideration, the Examiner is requested to telephone the undersigned at the number given below so that such matters may be discussed, and if possible, promptly resolved.

Please continue to address all correspondence in this Application to Mr. Edgar E. Spielman, Jr. at the address of record.

Respectfully submitted,



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